

# Evidence-based Morning Report

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# Outline

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# Purpose

- To **stimulate** residents' self-directed **learning** during and outside morning report
- To improve patient **care** in real time
- Conducted as an **interactive** group discussion in the “search mode”

# Specific objectives

- Refining problem-oriented case presentations with explicit emphasis on clinical reasoning
- Identifying clinical uncertainties whose exploration will illuminate patient care
- Defining questions suitable for evidence-based literature search

# Specific objectives

- Illustrating the **beneficial effect** of these efforts on clinical outcomes and clinicians' understanding of them
- Meant to be **fun**
- To **supply** a sense of **excitement** about the **art and science** of medicine that carries over into other arenas in the training program

# Morning Report Structure and Goals

- Case discussions pertain directly to patients **currently under the residents' care**, usually those admitted during the **previous 24 hours**.
- Residents present patients whose evaluation or treatment **stimulates** the group to ask questions that fulfill **two criteria** simultaneously:
  1. the questions must pertain to clinical decisions **essential to optimal care** of the patient (Table I).
  2. the group does **not know**, or disagrees about, evidence-based answers to the questions.

**TABLE I****Case-based Questions for Literature Searches: Examples from an End-of-Rotation (4-week) Summary**

<b>Patient/Chief Complaint Working Diagnosis (Final Diagnosis)</b>	<b>Search Questions</b>
65-year-old man/weight loss, nausea Gastrointestinal malignancy (Addison's disease)	What is the sensitivity of hyperkalemia in the diagnosis of adrenal insufficiency?
25-year-old woman/vomiting Viral hepatitis (Tylenol overdose)	Is N-acetyl cysteine therapy efficacious in acetaminophen poisoning if initiated more than 24 hours after ingestion?
37-year-old man/facial pain Herpes zoster cranial nerve V (Disseminated zoster)	What are the evidence-based indications for parenteral acyclovir treatment of varicella zoster infection?
25-year-old man/dyspnea, edema Congestive heart failure (Viral myocarditis)	Which etiologies of biventricular heart failure are associated with a normal heart size on chest x-ray?
48-year-old man/jaundice Spontaneous bacterial peritonitis (SBP) (Culture-negative SBP)	What is the diagnostic yield of repeat paracentesis in patients with suspected (but initially culture-negative) SBP?
64-year-old man/dyspnea Pulmonary embolism (Metastatic colon cancer)	What is the likelihood ratio of a low probability V/Q scan (PIOPED criteria) in the diagnosis of pulmonary embolism?
24-year-old woman/weakness Surreptitious diuretic abuse (Periodic paralysis)	What is the gold standard test for the diagnosis of hypokalemic periodic paralysis?
41-year-old man/dyspnea, cough Multilobar pneumonia (Blastomycosis)	What is the sensitivity and specificity of sputum smear for diagnosis of pulmonary blastomycosis?
35-year-old man/dyspnea, edema Metastatic testicular cancer (Metastatic testicular cancer and CHF due to progressive aortic regurgitation)	What is the prognosis of symptomatic chronic aortic regurgitation versus that of nonseminomatous metastatic testicular cancer?

# Morning Report Content and Conduct

- There are **four phases** of each morning report:
  1. the **report of search** results from the previous day;
  2. the **report of admissions** during the preceding 24 hours;
  3. case **presentations**;
  4. the **formulation of new questions** for search and report the following day.



Phase one: the report of search results from the previous day

# Phase One: Search Results

- The chief resident **begins** the meeting at 9 AM by **requesting** reports of (typically three) search results from the day **before**.
- Reporting residents present their findings using a **standardized format** they have completed in writing the previous day (Figure).
- This format **emphasizes**:
  - precise questions,
  - brief answers,
  - the scientific quality of the evidence found,
  - its relevance to current management of the patient.

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EVIDENCE-BASED MORNING REPORT

PATIENT NAME: \_\_\_\_\_ HOSPITAL # \_\_\_\_\_

REPORTING RESIDENT: \_\_\_\_\_ ATTENDING: \_\_\_\_\_

CLINICAL PROBLEM: 39 yo woman admitted with increasing dyspnea, large right pleural effusion, ascites and a palpable adnexal mass (probably ovarian). Thoracentesis on admission revealed exudative pleural fluid (protein 4.2/6.2, LDH 420/476) with negative cytology.

SEARCH QUESTION: What are the characteristics of pleural fluid associated with Meigs' syndrome?

SEARCH ANSWER: May be either transudate or exudate. Reliable statistics about relative frequency of each not available.

SOURCE OF INFORMATION: Textbooks of Medicine (Cecil 19th edition, Harrison 14th edition, Kelley 2nd edition), Fishman's Pulmonary Diseases and Disorders (2nd edition) and Light's Pleural Diseases (3rd edition).

QUALITY OF INFORMATION: Uncertain. Experts seem to disagree – Harrison (p. 234) and Fishman (p.2134) describe transudates while Kelley (p. 1890) and Light (p. 230) describe exudates. Only Light provides references describing primary data; these suggest that both transudates and exudates may be associated with Meigs' syndrome.

POTENTIAL IMPACT ON THE CARE OF MY PATIENT: The pleural fluid findings are consistent with Meigs' syndrome. However, only surgical excision of the ovarian mass and monitoring the patient's subsequent clinical course will establish that diagnosis with certainty.

David Mohammadi, MD, MPH

# Phase One: Search Results

- **Brief group discussion** is encouraged but this component of report usually ends in 15 mins.
- The written reports and any relevant reprints of the cited literature are **collected**, incorporated into the program's literature file
  - used for the end-of-rotation review session

# Phase two: the report of admissions during the preceding 24 hours

# Phase Two: Admissions Report

- The **chief resident** moderates this phase of report after **reviewing** the admissions log.
  - By 7:30 AM, all post-call teams have submitted to the chief resident **a log of patients** admitted during the **previous 24 hours**
  - Using a **standardized written form** listing four facts about each patient:
    - age,
    - gender,
    - chief complaint,
    - working diagnosis,
    - e.g. 24-year-old woman, headache and vomiting for 12 hours, carbon monoxide poisoning
- Typically, the chief resident employs one or more of **three didactic strategies**:

# Phase Two: Admissions Report

1. **ask specific questions** about a particular patient on the admissions log in order to use briefly a “**teachable moment**”
  - e.g. What was the carboxyhemoglobin level? Did you find a discrepancy between the PaO<sub>2</sub> and the O<sub>2</sub> saturation?
2. **highlight patients** with working diagnoses that **represent principles** reviewed in **recent** morning reports, e.g. acid-base or electrolyte disorders, as a brief **self-assessment question** for the group
  - e.g. Calculate the expected respiratory compensation for this metabolic acidosis and the patient's total body potassium deficit

## Phase Two: Admissions Report

3. ask a resident simply to report the admissions log to the group to:
  - test preparedness or presentation skills, or
  - stimulate the group's interest in one or more of the resident's patients.
  - e.g. syncope and CVA, or abdominal pain and hypercalcemia, often stimulate the skepticism or curiosity of the group
- At the conclusion of phase two (no later than 25 minutes after beginning), at least three cases have been chosen by the group or report leader for more detailed presentation.



# Phase three: case presentations

# Phase Three: Detailed Case Presentations

- Detailed case presentations then occupy the group **for 30 mins.**
- Usually **two or three** patients are discussed.
- Occasionally, time permits discussion of only one (especially **challenging**) case

# Phase Three: Detailed Case Presentations

- **Any part** of the presentation sequence can serve as the focus for discussion:
  - history,
  - physical findings,
  - test results,
  - differential diagnosis,
  - treatment decisions
- **Clinical reasoning**, rather than factual regurgitation, is emphasized.
- Patients whom residents initially describe as “**uninteresting**” or subjects the report leader knows least about often prove to be **the most instructive** for the group.

## Phase Three: Detailed Case Presentations

- Occasionally putting **faculty** rather than residents “**on the spot**” provides an opportunity for residents to watch more seasoned clinicians “**think out loud**.”
- Didactic techniques can vary as well:
  - usually **Socratic dialogue** predominates

# Phase Three: Detailed Case Presentations

- Each case discussion **generates one or more search questions** whose answer is both:
  - **essential** to the care of the patient and
  - **unknown** or controversial among the group.
- Discussion may continue beyond that point but the questions are **assigned for search** at the conclusion of each case discussion.

Phase four: the formulation of new questions for search and report the following day

## Phase Four: Formulating the Search

- The **final 5 minutes** of the meeting are devoted to:
  - **summarize** and **restate** the issues raised during the patient discussions
  - the **formulation** of precise questions for search and report the next day by the presenting residents.
- It is critical that these questions are **clearly articulated** by the responsible resident and explicitly **approved** by the larger group before the meeting adjourns (see Table I).

**TABLE I****Case-based Questions for Literature Searches: Examples from an End-of-Rotation (4-week) Summary**

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# Format Variations

- On last working day of the week, during the time usually reserved for Phase two, residents who have presented cases earlier in the week provide **follow-up** about their **patients' subsequent** clinical course:
  - often including a **review** of their radiographic studies, laboratory data, and pathology specimens.
- The **moderating** chief resident asks:
  - **update** the group about the **clinical impact** of the **search questions** on that patient's clinical care.

# Format Variations

- **New questions** commonly arise among the group in response to the new (follow-up) data
  - usually regarding sequential testing strategies, treatment decisions, disagreement among consultants, or prognosis.
- **Unresolved questions**, plus the search questions generated by the day's new case discussions, are **assigned** for report the following work day.

# Format Variations

- On **weekends**, formal morning report is **not** conducted;
  - patients admitted on weekends may be chosen for discussion during the **following week**.
- On the **final day** of each ward **rotation**, morning report is devoted to the **chief resident's review** of cases that generated **search** questions during the previous 4 weeks.
- A written copy of the chief resident's end-of-rotation presentation is then **distributed** to all residents in the program.

# Reference

- Reilly B, Lemon M. Evidence-based Morning Report: A Popular New Format in a Large Teaching Hospital. Am J Med.1997; 103:419–426.